

---

# Communications networks A

## Finalità

The course offers an introduction to the networking, presenting the concept of network architectures and protocols, Local and Wide Area Networks (LAN/MAN), Internet and its evolution towards new generation networks.

## Programma

### 1) Introduction to telecommunication networks

Introduction

network taxonomy

### 2) Architectures and protocols

layered architectures, internetworking

communication functions and protocols (multiplexing, framing, addressing and switching/routing, error control, flow control, congestion control, etc.)

examples of protocols

OSI model and Internet

Local Area Networks (LAN)

switched Ethernet, Gigabit Ethernet

WirelessLAN (IEEE 802.11)

### 4) Internet

architecture

Internet protocol (IP)

routing protocols

transport protocols (UDP/TCP)

Internet evolution, IPv6, mobility

## Modalità d'esame

Two examination tests (midterm and final), or writing/oral exam.

## Testi consigliati

[1] A. S. Tanenbaum, "Computer Networks", 4th Edition, Prentice Hall, 2003

[2] D. E. Comer, "Internetworking with TCP/IP Vol.1: Principles, Protocols, and Architecture", 4th Edition, Prentice Hall, 2000

[3] J. F. Kurose, K. W. Ross, "Internet and Computer Networks", 2nd Edition (2003), McGraw-Hill